

TWO NEW SPECIES OF LOMACHÆTA, WITH A KEY TO DESCRIBED SPECIES*

(Hymenoptera, Mutillidæ)

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Mr. George E. Bohart, Davis, California, has sent me three specimens, representing both sexes, of a small Mutillid which he states were reared from Larrid cocoons. They proved to be an undescribed species of the genus *Lomachæta*. Mr. Rollin H. Baker, Austin, Texas, has sent me an additional male specimen of the same genus collected in northern Mexico. It represents a second undescribed species.

The genus *Lomachæta* was proposed by the author (Ann. Ent. Soc. Amer., vol. 29, pp. 289-295, 1936). The two new species bring the total number of known species to six. A key to the species is herewith presented to facilitate their identification. The few observations regarding biology which are available indicate that the species of this genus are parasites of small aculeate Hymenoptera which nest in the twigs of plants.

KEY TO THE SPECIES OF LOMACHÆTA

Males

1. Body almost entirely, or entirely black.....2
- At least the abdomen in part ferruginous.....3
2. Pronotum with moderate, close punctures throughout; distal margin of second abdominal tergite obscurely testaceous.....
.....*punctinota* Mickel
- Pronotum with moderately small punctures, the latter sparse medially, close at the lateral margins; abdomen entirely black.
.....*coloradensis* Mickel
3. Abdomen almost entirely ferruginous; abdominal tergites three to six each with an anterior, median, black spot; most of the area of each black spot on that part of the tergite telescoped within the preceding segment; trochanters and femora of middle and posterior legs ferruginous, except the tips of the femora blackish.....*hicksi* Mickel
- Only the first and second abdominal segments marked with ferruginous; legs entirely black.....4
4. First tergite, and second abdominal segment entirely ferruginous; head and thorax entirely, and abdomen, except marginal bristles on tergites two to four, and sparse, dark hairs medially on tergites five to seven, clothed with sparse, pale hairs.....*formosula* n. sp.

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- . First and second abdominal segments ferruginous only in part; the median, longitudinal third of the second tergite black, the black area dilated toward the posterior margin, and slightly constricted at the anterior margin; first sternite mostly black, ferruginous only at the sides; second sternite with a median, anterior, cuneiform, infuscated spot; front, vertex, mesonotum, scutellum, black area of second tergite and tergites three to seven with sparse black pubescence
.....*variegata* n. sp.

Females

1. Entirely pale ferruginous, except the antennæ, tibiæ and tarsi infuscated; dorsum of thorax very broadly reticulate throughout.....*hicksi* Mickel
- . At least the second abdominal tergite largely black, and the ferruginous of the head and dorsum of thorax infuscated; at least the anterior third to half of dorsum of thorax narrowly reticulate, the remainder broadly reticulate.....2
2. All of the abdominal segments, except the first, piceous to black, the posterior margin of each tergite and sternite ferruginous; tibiæ and tarsi piceous.....*variegata* n. sp.
- . Abdomen entirely ferruginous, except the second black with the broad, posterior margin ferruginous; legs entirely ferruginous.....*minutula* Mickel

Lomachæta variegata Mickel, new species

Male. Black, except the first and second abdominal segments in part ferruginous as described below, clothed with sparse, pale, glittering pubescence, except the front, vertex, mesonotum, scutellum, median black area of second tergite, and tergites three to seven with sparse, black pubescence, the abdominal tergites also with a few, pale, erect hairs at each lateral margin; pronotum with moderate, close punctures throughout; first segment of flagellum shorter than pedicel, about half the length of second flagellar segment. Length, 5.5 mm.

Head entirely black, clothed with sparse, pale, glittering pubescence, except front and vertex with sparse, black pubescence, and clypeus with long, thick pubescence pale in certain lights, fuscous in others; mandibles tridentate at tip and broadly emarginate beneath; clypeus convex medially, the sculpture obscured by thick pubescence; antennal tubercles separated by a space equal to length of second flagellar segment; scape densely punctate, clothed with black pubescence; first segment of flagellum as described above; front subreticulate, the punctures large and crowded, but becoming slightly smaller and less crowded toward vertex, the latter with moderate, slightly separated punctures; ocelli very small; relative widths of head and thorax at tegulæ, 2.0-2.2. *Thorax* entirely black, clothed with sparse, pale, glittering pubescence, except mesonotum and scutellum with sparse,

black pubescence; pronotum and mesonotum with moderate, distinct, close punctures throughout; scutellum with moderate, distinct punctures anteriorly, small, distinct punctures at posterior margin; dorsum of propodeum without an enclosed space, both dorsum and posterior face of propodeum reticulate throughout; propleura closely punctate; mesopleura with large, contiguous punctures medially, the anterior and posterior fourths glabrous, almost impunctate; metapleura and sides of propodeum glabrous, unsculptured, except reticulation of dorsum and posterior face of propodeum extending slightly on to sides of propodeum; tegulæ convex, glabrous, impunctate, except entire, narrow margin punctate and pubescent. *Abdomen* black, except as follows: first tergite ferruginous, except anterior margin black; second tergite with lateral thirds ferruginous, median third black, the lateral margins of black area slightly sinuate, dilated toward posterior margin and slightly constricted at anterior margin; lateral margins of first sternite ferruginous; second sternite ferruginous, except a large anterior, cunieforn spot blackish; abdomen clothed with sparse, pale, glittering pubescence, except median black area of second tergite and tergites three to seven with sparse, black pubescence; bristles at posterior margin of second, third and fourth segments black; first tergite mostly impunctate, with a submarginal row of large, contiguous punctures near posterior margin; second tergite with moderate, well separated punctures; tergites three to seven with fine, separated punctures; first sternite with a median, longitudinal carina; second sternite with moderately large, distinct, close punctures; sternites three to six finely punctate at posterior margin; hypopygium with very small, distinct punctures. *Wings* subhyaline; venation typical, as figured previously for *hicksi*. *Legs* black, clothed with sparse, pale, glittering pubescence; tibiæ externally with very sparse, erect, black bristles; calcaria pale.

Female. Ferruginous, except front, vertex and dorsum of thorax infuscated; abdomen, except first segment and posterior margin of remaining segments, piceous; and femora, tibiæ and tarsi, infuscated to black; front, vertex and anterior half of dorsum of thorax narrowly reticulate, the posterior half broadly reticulate; abdominal tergites shagreened, and with small, scattered punctures, the second tergite with a thick, posterior fringe of pale pubescence, third tergite with a similar, thinner fringe; pygidial area obsolete. Length, 3 mm.

Head ferruginous, except front and vertex infuscated and flagellum black, clothed with very sparse, erect, black hairs, except the genæ and clypeus with pale pubescence; mandibles edentate, not emarginate nor toothed beneath; antennal tubercles slightly separated; pedicel and first flagellar segment equal in length, the latter longer than second, but shorter than second and third united; antennal scrobes not carinate above; front, vertex and genæ reticulate, the posterior margin of genæ defined by a

carina. *Thorax* ferruginous, infuscated like head, the dorsum clothed with scattered, recumbent, pale hairs, and very sparse, erect, fuscous hairs; pleural areas bare, except a few, scattered, pale hairs on propleura and mesopleura; anterior half of dorsum of thorax narrowly reticulate, the posterior half broadly reticulate; dorsum of propodeum and lateral margins of posterior face of propodeum also broadly reticulate, but median, posterior area of posterior face of propodeum unsculptured, glabrous; relative widths of thorax at humeral angles, anterior spiracular tubercles, propodeal spiracles and posterior margin of propodeum, 1.2 — 1.4 — 1.3 — 0.3; propodeal spiracular tubercles prominent; scutellar scale entirely absent; propleura and posterior half of mesopleura reticulate; anterior half of mesopleura, metapleura entirely, and sides of propodeum glabrous, unsculptured. *Abdomen* piceous, except first segment ferruginous, and posterior margins of tergites and sternites two to five, ferruginous, clothed with sparse, pale hairs beneath and on first tergite above, the remaining tergites with scattered, erect, fuscous hairs, second tergite also with a thick, posterior marginal fringe of pale pubescence, and third tergite with a similar fringe, but pubescence thin; first tergite with a few, scattered punctures, and a posterior, submarginal row of moderate, distinct punctures; second and following tergites shagreened, and with scattered, small punctures; pygidial area obsolete; first sternite with a median, longitudinal carina; second sternite with moderate, distinct punctures; sternites three to five indistinctly, finely punctate at posterior margin. *Legs* ferruginous, the tibiae and tarsi piceous, clothed with sparse, pale, glittering pubescence; calcaria pale.

Holotype, allotype and paratype, a male and two females, Riverside County, California, May 2, 1939, reared from Larrid cocoon in twig (R. M. Bohart). Holotype and allotype in the California Academy of Sciences collection; paratype in University of Minnesota collection.

The three type specimens each bear a label reading "ex Crabronid," but Mr. George E. Bohart has stated in a letter to me that the cocoons from which the specimens were reared are actually Larrid cocoons.

Lomachæta formosula Mickel, new species

Male. Black, except first abdominal tergite, second abdominal segment entirely, and tips of mandibles, ferruginous, clothed throughout with sparse, erect, pale hairs, except tergites five to seven medially with sparse, erect, dark hairs, and bristles at posterior margin of tergites two to four, black; pronotum with moderately large, irregularly spaced punctures, some well separated, some confluent; first segment of flagellum shorter than

pedicel, about half the length of second flagellar segment. Length, 5 mm.

Head entirely black, except tips of mandibles ferruginous, clothed throughout with sparse, long, erect, pale hairs, except a few fuscous hairs at inner eye margins; mandibles tridentate at tip, distinctly emarginate beneath, and with a distinct tooth beneath, half the distance from base to apex; median area of clypeus triangular, slightly elevated, densely, finely punctate throughout; antennal tubercles separated by a space equal to length of second flagellar segment; scape clothed with pale hairs throughout; front subreticulate, the punctures large and crowded; vertex with moderately large, distinct, separated punctures; ocelli very small; relative widths of head and thorax at tegulæ, 1.3 — 1.6. *Thorax* entirely black, clothed throughout with sparse, long, erect, pale hairs; pronotum with moderately large, irregularly spaced punctures, some well separated, some confluent; mesonotum with moderately large, close punctures throughout; scutellum almost flat, only very slightly convex, with punctures similar to mesonotum but more crowded; dorsum of propodeum without an enclosed space; both dorsum and posterior face of propodeum broadly reticulate throughout; propleura mostly smooth, glabrous, very few punctures; anterior and posterior fourths of mesopleura glabrous, impunctate, the median half with large, contiguous punctures, subreticulate; metapleura and sides of propodeum glabrous, impunctate, the dorsal margin of metapleura finely rugose, and reticulations of dorsum and posterior face of propodeum extending slightly on to sides of propodeum; tegulæ large, strongly convex, glabrous, impunctate, except entire margin punctate and with long, pale, erect hairs. *Abdomen* black, except first tergite, and second segment entirely, ferruginous, clothed throughout with sparse, long, erect, pale hairs, except tergites five to seven medially with hairs dark, and bristles at posterior margin of tergites two to four, black; first tergite almost impunctate, but posterior margin with a row of very large, contiguous punctures; second tergite with moderately large, distinct, slightly separated punctures; tergites three to seven with progressively small to fine, separated punctures; second sternite with large, close punctures throughout. *Wings* subhyaline; venation typical, as previously figured for *hicksi*. *Legs* black, clothed with sparse, long, erect, pale hairs; tibiæ without black bristles; calcaria pale.

Holotype, male, Puerta de la Goriona, elevation 4900 feet, Sierra del Carmen, Coahuila, Mexico, July 13, 1938 (Rollin H. Baker), in University of Minnesota collection. (Mr. Baker writes that "Sierra del Carmen" on the label should read "Sierra de la Encantada.")

Similar to *variegata* but with the second abdominal segment entirely ferruginous and clothed almost entirely with long, erect, pale hairs.